The (Real) Price of Satellite Connectivity: A Global Analysis of Starlink's affordability

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Since its launch in 2021, Starlink has quickly gained global traction, expanding rapidly and attracting a growing user base[1] across 105 countries. Many countries[2] have welcomed Starlink as a promising solution to bridge the digital divide, bringing high-speed internet to remote and underserved areas. Yet not all governments have embraced it; some have indeed resisted its deployment, unsure of its impact on local telecom markets, spectrum usage and digital sovereignty. Despite these mixed reactions, Starlink's ability to provide connectivity to even the most isolated communities position it as a potential game-changer in global internet access. A critical question remains though: **can Starlink truly make digital inclusion affordable on a global scale**?

To answer this question, we collected and analysed data on Starlink's pricing examining its economic accessibility across different countries. This paper presents our findings, offering insights that aim to guide policy and strategic decisions on digital infrastructure and connectivity worldwide.

Introduction

Starlink's service offerings vary slightly by country, but they generally revolve around three main categories tailored to different user needs and geographic considerations. These include:

The Residential Service: The core offering of Starlink, which promises high-speed broadband for households, particularly targeting areas where conventional internet options are limited. Speeds and latency can vary based on local demand and the number of active users.

The Business and Enterprise Solutions[3]: a separate business-tier plan, designed for enterprises requiring higher speeds, increased bandwidth, and more robust connectivity support. This package is typically priced higher than the residential option and is available in select markets.

The Mobile Options: Responding to the need for mobile connectivity, Starlink also provides options for Motorhomes/RV owners, campers, maritime businesses and other mobile users, allowing internet access while traveling.

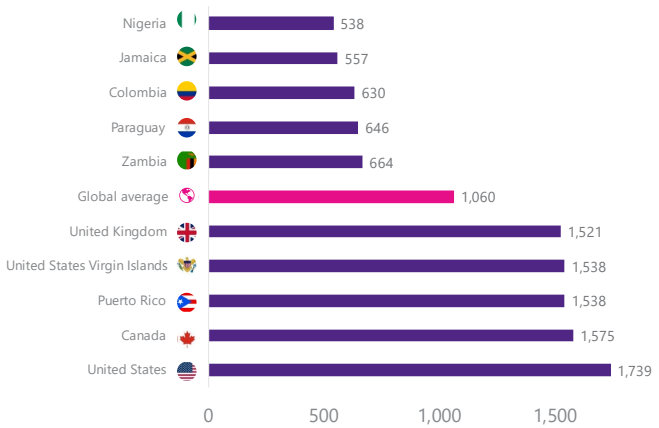
In this analysis, we focus on the residential service, marketed by Starlink as "best for households."

Across all regions, customers pay a one-time hardware fee for the satellite dish and router, followed by a monthly subscription. Our analysis focuses on the total cost of Starlink's residential service over one year, which includes both the one-time hardware fee as well as the monthly subscription costs. This approach provides a comprehensive view of the true financial commitment required for a household to adopt Starlink while allowing for consistent comparisons across different markets and income levels.

Different nominal pricing across different markets

Starlink's annual residential price averages USD 1,060 globally, but this varies significantly across regions and countries, highlighting diverse pricing strategies. The figure below shows the top five most and least expensive countries for Starlink's residential service.

Figure 1: Top five most and least expensive countries for Starlink (USD, Spot[4])



Source: Starlink. Plum Analysis

North America leads as the most expensive region, with The United States topping the list at USD 1,739, followed closely by Canada at USD 1,575. Europe's average pricing is lower (USD 1,019) with the UK reaching an annual cost of USD 1,521 and France standing out with a remarkably low price of USD 798[5].

The Asia/Pacific region presents a mix of high and moderate costs, with Singapore and Indonesia at USD 1,496 and USD 1,490

respectively, while countries like the Philippines and Fiji exhibit lower prices around USD 1,044 and 944 USD.

Latin America and the Caribbean display broad pricing variability, from Puerto Rico and the Virgin Islands, where prices align with North American rates at USD 1,538, to Jamaica and Colombia, with significantly lower rates at USD 557 and USD 630.

The African continent predominantly features the lowest prices, with Nigeria being the least expensive at USD 538. Other African nations like Kenya and Zambia also exhibit relatively low annual prices of USD 832 and USD 664 respectively.

These price differences suggest that Starlink's approach is not simply cost-based[6] but potentially tailored to market conditions: The high prices across North America seem to reflect the relatively higher income levels and the strong demand for broadband connectivity in rural and underserved areas where terrestrial options are limited[7]. Besides, the price paid by Starlink customers in the US is roughly comparable to what households typically pay for a terrestrial residential internet service.

In contrast, the low prices in African countries reflect not only the lower income levels but also the significant addressable market in the region that has the most connectivity gaps in the world.

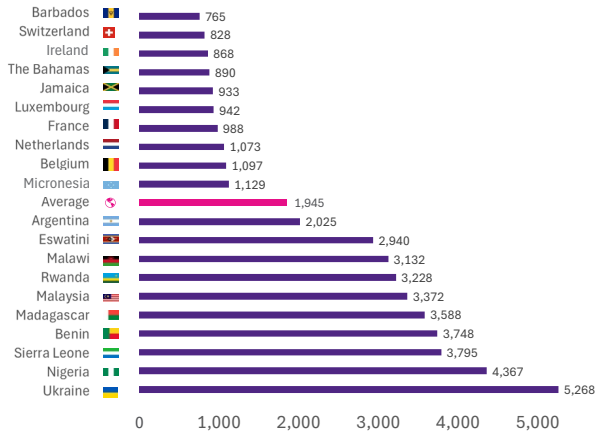
In Europe however, the price variations between countries are interesting as they can't be explained by the difference in income levels nor by a lack of terrestrial alternatives. The price level in France for example suggests a pricing strategy that has been adapted to the competitive local market where FTTH and 4G coverage are high, and prices amongst the least expensive in the continent.

Beyond Spot Rates: Starlink's real price in PPP Terms

The analysis of Starlink's annual price using Purchasing Power Parity (PPP) reveals a starkly different affordability landscape than spot exchange rates suggest. By adjusting for local cost of living, PPP provides a more equitable comparison of service costs worldwide, offering valuable insight into the relative financial burden on consumers.[8]

As shown in Figure 2, Ukraine emerges as the most expensive market for Starlink in PPP-adjusted terms, with an annual price of USD 5,268 — a substantial economic strain compared to the highest spot rate of USD 1,739 in the United States. This discrepancy highlights how differences in purchasing power impact affordability; the PPP adjustment reflects the true cost relative to local income levels and living standards. While Ukraine's nominal price is USD 1,333, the PPP-adjusted figure of USD 5,268 indicates that, for the average Ukrainian resident, the financial burden of a one-year Starlink subscription is equivalent to what a US-resident would experience if they paid USD 5,268 for the same service.

Figure 2: Top ten most and least expensive countries for Starlink (USD, PPP)



Source: Starlink, The World Bank. Plum Analysis

Other countries also exhibit substantial burdens in PPP terms. Most of these are in Africa: Nigeria's PPP-adjusted price of USD 4,367 contrasts sharply with its nominal spot rate of USD 538. Similarly, PPP-adjusted prices in Sierra Leone (USD 3,795), Benin (USD 3,748) and Madagascar (USD3,588) are amongst the highest in the world, revealing the considerable impact on populations with lower nominal prices but reduced purchasing power.

On the other end of the spectrum, some countries see lower PPP-adjusted prices. Barbados stands out with the lowest price at USD 765, slightly below its spot rate of USD 990. This suggests that Starlink services are relatively more affordable in Barbados when adjusted for local incomes. Similarly, Switzerland and Ireland show lower relative costs of USD 828 and USD 868, reflecting the higher incomes and stronger purchasing power in these countries.

Across all countries analysed, the average annual price of Starlink's residential service using PPP stands at USD 1,945 — 83% higher than the average USD 1,060 derived using the spot rates.

What does it mean for digital inclusion?

Digital inclusion is about ensuring that all individuals, regardless of income level or location, have access to the internet and the opportunities it brings. A key factor in achieving true digital inclusion is affordability; if internet services are too costly, large segments of the population remain excluded from critical digital resources such as education, healthcare, and economic opportunities. Affordability, therefore, is not just a financial consideration—it's a social necessity for bridging the digital divide and fostering equal opportunity.

The average Gross National Income (GNI) per capita serves as the standard international benchmark against which broadband affordability is measured. The United Nations Broadband Commission for Sustainable Development has set a goal that broadband costs should be no more than 2% of GNI per capita, marking this as the affordability threshold for meaningful, inclusive access.

In assessing the affordability of Starlink globally, we calculated for each country, the annual price of Starlink as a percentage of the GNI per capita (both in PPP terms). We then divided countries into three distinct affordability categories, see Figure 3.

Figure 3: Starlink country's affordability based on % of GNI, PPP

Affordable	Moderately Affordable	Significant financial burden
• Ireland • Switzerland • Luxembourg • Norway • The Netherlands • Belgium • Austria • France • Singapore • Sweden • Germany • The US • Italy	• Panama • Costa Rica • Romania • Barbados • Uruguay • Greece • Czechia • New Zealand • Cyprus • Portugal • Canada • United Kingdom • Bahamas, the • Spain • Japan • Australia	• Sierra Leone • Madagascar • Malawi • Mozambique • Rwanda • Benin • Argentina • Nigeria • Zambia • Haiti • Kenya • Ukraine • Honduras • Eswatini • Philippines • Micronesia, • Indonesia • Guatemala • El Salvador • Fiji • Paraguay • Ecuador • Peru • Dominican Republic • Malaysia • Colombia • Brazil • Jamaica • Mexico • Chile • Trinidad and Tobago • Poland • Puerto Rico

Source: Plum analysis
Note: Countries with unavailable GNI per capita, PPP factor or pricing data are not included

- **Affordable (< 2% of GNI per capita):** Countries in this category meet the UN's threshold for affordable broadband, indicating that Starlink's cost would be accessible to most households without imposing significant financial strain.
- **Moderately affordable (>2% and <5% of GNI per capita)** range indicates a moderately affordable bracket where Starlink's service might be a viable option for some but challenging for lower-income households. This category suggests that while Starlink could enhance connectivity for a portion of the population, it may still exclude economically vulnerable groups, thereby limiting its potential for universal digital inclusion.
- **High Financial Burden (> 5% of GNI per capita):** For countries in this category, the cost of Starlink represents a significant financial burden, making it accessible to a "happy few".

Our findings show that most countries fall outside the affordable range, with most classified under "High Financial Burden" (see Figure 3). For instance, in Fiji, the annual cost of Starlink services amounts to 17% of the GNI per capita. In other countries, such as Kenya (40%), Nigeria (64%), Benin (89%), and Madagascar (195%), the annual price constitutes between 40% and 195% of the GNI per capita, highlighting the considerable financial burden that Starlink's pricing represents in these countries.

This indicates that while Starlink offers technical potential and claims a growing customer based, only a fraction of the population in these countries can afford to pay for it. These high prices undoubtedly hinder its role as an inclusive connectivity solution, especially for low-income regions.

Considerations for governments and policymakers

In light of these results, governments and policymakers might consider the limitations of relying on LEO satellite services like Starlink for nationwide connectivity, particularly as these companies are often criticised for not investing in national infrastructure or in local communities.

Countries also remain subject to business decisions beyond local control. The reliance on an extra-territorial provider inevitably creates vulnerabilities, as the service could be discontinued like in Kenya due to capacity constraints[9] or repriced at any time as this has been the case in Nigeria, where the monthly subscription prices have almost doubled recently[10].

It is therefore important that policymakers carefully evaluate the role of satellite services like Starlink within their broader digital strategies. While Starlink can be a valuable supplementary option, the primary focus should be on building national, resilient broadband infrastructure that aligns with national goals for inclusive, sustainable, and autonomous connectivity.

Conclusion

In conclusion, Starlink's pricing strategy appears to be more than merely cost-based; it seems to adapt to local market conditions, resulting in notable price variations across regions and countries. While developing and low-income countries often see lower prices, these reductions do not necessarily translate to affordability, limiting Starlink's role as a truly inclusive solution.

This raises important questions for the whole telecom industry and for policymakers: Can satellite-based solutions like Starlink ever be affordable enough to serve as a primary tool for digital inclusion or will they remain a premium option, accessible only to a small segment of the population?

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Methodology

Data collection.
Starlink prices were collected directly from the Starlink website on August 6, 2024. The analysis focuses solely on the residential unlimited data plan, providing a consistent basis for comparison. In each country, the total price used for comparison includes both the annual subscription fee and the one-time cost of Customer Premises Equipment (CPE). Although some countries offer a mini package, this was excluded from the analysis to maintain uniformity.

Spot conversion rates

To accurately compare prices across different countries, currency conversion rates were also collected on August 6, 2024, from Oanda.com. These rates were used to convert local prices into USD Spot, providing a standard measure for comparison. Spot exchange rates reflect the current market conditions and were used to calculate the annual price in USD for each country.

PPP adjustments

PPP factors, sourced from the World Bank, were used to adjust the prices for local purchasing power. PPP adjustments provide a more equitable basis for comparison by accounting for the relative cost of living in each country. This approach ensures that the analysis reflects not just the nominal price of Starlink services but also their relative affordability in different economic contexts. It is important to note that PPP factors were not available for all countries, including Tonga, Samoa, and the Virgin Islands. Consequently, these countries were excluded from the PPP-adjusted analysis.

[1] Starlink reported 4 million customers in September 2024

[2] See for example declarations from the Malagasy Minister of Communications, the Kenyan President and the Nigerian Minister of Communications and Digital Economy on social medias

[3] Business users also benefit from additional features such as priority customer support and potentially faster speeds

[4] A spot exchange rate is the current price at which a person can exchange one currency for another at a specific time. Spot rates have been collected on the 06/08/2024.

[5] France is in the top ten countries where Starlink is the least expensive.

[6] For more details on the cost structure of LEO satellite operators see: The Economics of Satellite Broadband: a primer. Plum Insight (2024) and for a back-of-the napkin calculation of Starlink's financial sustainability, see: Steve Song's article Starlink and Inequality (2023) available here: https://manypossibilities.net/2023/11/starlink-and-inequality/

[7] See: https://www.theguardian.com/technology/2024/mar/17/rural-broadband-us-internet-providers

[8] Purchasing power parity (PPP) conversion factor is a spatial price deflator and currency converter that controls for price level differences between countries. For a detailed discussion see: https://www.imf.org/external/pubs/ft/fandd/2007/03/basics.htm

[9] See: https://www.businessdailyafrica.com/bd/corporate/technology/starlink-suspends-sales-in-5-counties-on-full-capacity-4811674

[10] See: https://www.connectingafrica.com/connectivity/starlink-hikes-nigerian-subscription-prices